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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,472	02/23/2004	Alain T. Luxembourg	JJPR-0050	1342

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EXAMINER	
VANDERVEGT, FRANCOIS P	
ART UNIT	**PAPER NUMBER**
1644	

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/785,472	LUXEMBOURG ET AL.	
	Examiner	Art Unit	
	F. Pierre VanderVegt	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10072004, 03252005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This application is a continuation of U.S. Application Serial Number 09/434,965, which is a divisional of U.S. Application Serial Number 08/909,549, which claims the benefit of the filing date of provisional application 60/025,588.

Claims 1-15 and 19-27 have been canceled.

Claims 16-18 are currently pending and are the subject of examination in the present Office Action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 16-18 stand rejected under 35 U.S.C. 102(b) as being anticipated by Burshtyn et al (Journal of Immunology [1993] 151:3070-3080; U on form PTO-892).

It was previously stated: "Burshtyn teaches a substrate for capturing peptide antigens comprising empty H-2D^b molecules bound to agarose beads. When said beads were incubated with human B_2Microglobulin, high affinity binding sites were created for an influenza peptide antigen, (see entire article, Abstract in particular).

The method taught by Burshtyn is taught as a method that can be applied by one of ordinary skill in the art to any Class I molecule of interest. Indeed, Burshtyn teaches that, "these uniform populations of bead-bound class I complexes will also prove useful in the further analysis of CTL target structure formation and recognition" at page 3080, column 1 in particular. Burshtyn recognizes that empty class I molecules are unstable, but addresses the problem well known in the art with the present method and teaches in the paragraph bridging pages 3079-3080 (in particular):

> "[b]ecause class I complexes that lack peptide are known to be unstable, empty complexes might not survive affinity purification. In our case, the recovery of empty D$^b\beta_2$m complexes preexisting in the cells was favored by isolating the proteins under conditions of low temperature and a high solubilization density. Furthermore, by not eluting the class I molecules from the affinity matrix we preserve empty complexes that are subsequently able to bind added peptide."

Furthermore, while Burshtyn exemplifies D^b Class I molecules, Burshtyn teaches at page 3070, column 2 in particular, that quantitative data regarding the class I L^d molecule had been previously obtained and accordingly provides the teaching required by the artisan to isolate class I L^d molecules. Claim 16 recites that the cells are recombinant and claim 27 recites that the MHC class I molecules of the claimed invention are purified from recombinant Drosophila cells. These are "product-by-process" claims relying upon a different cellular source of MHC Class I molecules to distinguish the final product. However, the fact remains that the cited reference and the present specification both disclose empty human MHC class I complex on a non-lipid bilayer substrate. Absent a showing that there is a physical

difference between empty human MHC class I complexes expressed in and purified from recombinant mammalian or Drosophila cells and empty human MHC class I complexes expressed in and purified from mammalian cell lines are viewed as being the same. The office does not have the facilities and resources to provide the factual evidence needed in order to establish that there is a difference between the materials, i.e., that the claims are directed to new materials and that such a difference would have been considered unexpected by one of ordinary skill in the art, that is, the claimed subject matter, if new, is unobvious. In the absence of evidence to the contrary, the burden is on the Applicant to prove that the claimed materials are different from those taught by the prior art and to establish patentable differences. See In re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ 2d 1922 (PTO Bd. Pat. App. & Int. 1989). The prior art teaching anticipates the claimed invention."

Applicant's arguments filed January 27, 2005 have been fully considered but they are not persuasive.

Applicant argues that the claimed invention is distinguishable from the cited reference and asserts that the Office has fallen short of a showing of inherency because the person of ordinary skill in the art would not recognize that the elements of the claimed invention are present in the teachings of Burshtyn. Applicant argues that the empty MHC class I molecules of the claimed invention are not the same as those of Burshtyn because there are physical differences between MHC class I molecules produced recombinantly by *Drosophila* (claimed) and MHC class I molecules produced by and purified from mammalian cells (prior art). Citing the teachings of Jackson et al (17 on form PTO-1449 filed 10/07/2004) Applicant argues that a higher percentage of empty MHC class I molecules can be purified from recombinant *Drosophila* cells due to the lack of intracellular peptide loading by *Drosophila* cells. This argument fails to distinguish the claimed invention from the MHC class I molecules of the prior art because the amount obtainable from one source versus another does not constitute a physical difference. The fact that one method of production is more efficient than another does not change the molecule being produced. The method of Burshtyn requires extra steps versus the instantly disclosed method of producing the claimed product, involving the production of peptide-loaded MHC class I molecules in mammalian cells followed by chemical treatment to remove the associated antigenic peptide to yield an empty MHC class I molecule. However, the fact remains that both methods result in the same product -- an empty MHC class I molecule of the L^d haplotype. The instantly claimed product is not a Drosophila MHC class I molecule, which is not known to exist (Jackson et al, 17 on form PTO-1449; page 12119, second column for example). Rather, the instantly claimed product is a mammalian MHC class I molecule produced recombinantly in a Drosophila cell. Without evidence to the contrary, one of ordinary skill in the art would recognize that the claimed mammalian MHC class I L^d molecule produced empty in drosophila and the mammalian MHC class I L^d molecule produced in a mammalian cell according to the

method of Burshtyn, then emptied of its antigenic peptide are the same and are therefore not patentably distinct from one another.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 16-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Burshtyn et al (Journal of Immunology [1993] 151:3070-3080; U on form PTO-892) in view of Nikolic-Zugic et al (Eur. J. Immunol. [1990] 20:2431-2437; V on form PTO-892).

It was previously stated: "Burshtyn has been discussed supra.

Burshtyn does not teach K^{bm3} Class I molecules.

Nikolic-Zugic teaches the use of K^{bm3} Class I molecule-expressing APCs for presentation to T cells (see entire article, Abstract in particular).

It would have been prima facie obvious to a person having ordinary skill in the art at the time the invention was made to apply the teachings of Burshtyn to K^{bm3} Class I molecules. One would have been motivated, with a reasonable expectation of success, to apply the teachings of Burshtyn to additional class I molecules because the reference teaches that peptide binding information is available for class I molecules, such as K^{bm3}, other than the D^b exemplified and because Burshtyn teaches that class I molecules bound to the agarose beads are reusable, reducing the need for costly and time consuming additional purifications."

Applicant has not provided substantive argument regarding the teachings of Nikolic-Zugic, relying instead upon the alleged deficiencies of the teachings of Burshtyn, which have been addressed supra. Accordingly, the instant ground of rejection stands without any further explanation.

Conclusion

3. No claim is allowed.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Pierre VanderVegt whose telephone number is (571) 272-0852. The examiner can normally be reached on M-Th 6:30-4:00 and Alternate Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

F. Pierre VanderVegt, Ph.D.
Patent Examiner
May 3, 2005

DAVID SAUNDERS
PRIMARY EXAMINER
ART UNIT 182 1644